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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,672	12/11/2001	Joseph A. Courtney	GW-0058-US	4847
23549	7590	10/19/2004	EXAMINER	
THE GLEASON WORKS 1000 UNIVERSITY AVENUE P O BOX 22970 ROCHESTER, NY 146922970			SHUTE, DOUGLAS M	
			ART UNIT	PAPER NUMBER
			2121	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,672

Applicant(s)

COURTNEY, JOSEPH A.

Examiner

Douglas M. Shute

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/30/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/11/01, 7/3/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 - 15 are presented for examination.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

3. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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4. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Drawings

5. Figures 1-3 should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).-- Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. In Figure 1, it appears that element 11 has been mismarked.

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7. In Figure 4, it appears that element 36 (page 7, line 4) is missing.

8. For clarity, a figure should also be provided to illustrate the processing sequence performed by the computer in effecting cutting stroke and return stroke speed.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-2, and 4-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, Applicant's specification pages 1-2 (hereinafter AAPA) in view of Kyodo et al. (5,652,510) (hereinafter Kyodo).

11. As per claim 1, AAPA shows the invention substantially as claimed having a computer controlled machine for forming at

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least one tooth on a workpiece with a cutting tool, said cutting tool being reciprocated to define a tool stroking motion wherein said tool stroking comprises a cutting stroke and a return stroke, and wherein said return stroke is carried out at a speed faster than the speed of said cutting stroke, said machine comprising a rotatable element associated with the reciprocation of said cutting tool (e.g., page 4, line 20 through page 6, line 17). AAPA does not specifically show said element including at least one detectable surface positioned thereabout, a position sensor located adjacent said element and detectable surface, whereby during rotation of said element, the passing of a ~~leading edge of said at least one detectable surface proximate~~ said position sensor at the beginning of said return stroke results in a signal being sent to the computer to effect an increase in the speed of the return stroke relative to the speed of said cutting stroke, and wherein passing of a trailing edge of said at least one detectable surface proximate said position sensor at the end of said return stroke or at the beginning of said cutting stroke results in a signal being sent to the computer to effect a return to the speed of the cutting stroke. However, AAPA shows the known usage of programming a machine controller to vary the rotational speed of a drive shaft connected to a stroking mechanism by inputting commands whereby

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rotational speeds are varied between predetermined degree intervals of drive shaft rotation (e.g., page 2, lines 23-30). Further, Kyodo shows a shaft position sensor where characteristics of one portion of the shaft differs from that in other portions (e.g., col. 2, lines 14-28). While Kyodo deals with shaft position detection where the shaft has displacement along its axis, it would have been obvious to one of ordinary skill in the art at the time the invention was made that such differing characteristic detection would be equally applicable to shaft rotational position detection and that that such rotational position detection could be combined with the known suggestion of using predetermined degree intervals recited in AAPA (e.g., col. 2, lines 14-28) to produce the machine of claim 1 having an element including at least one detectable surface positioned thereabout, a position sensor located adjacent said element and detectable surface, whereby during rotation of said element, the passing of a leading edge of said at least one detectable surface proximate said position sensor at the beginning of said return stroke results in a signal being sent to the computer to effect an increase in the speed of the return stroke relative to the speed of said cutting stroke, and wherein passing of a trailing edge of said at least one detectable surface proximate said position

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sensor at the end of said return stroke or at the beginning of said cutting stroke results in a signal being sent to the computer to effect a return to the speed of the cutting stroke because this would provide a more flexible way of obtaining shaft angular information for the machine of AAPA.

12. As per claim 2, it is rejected for reasons as given above for claim 1 and further as it would have been obvious to one of ordinary skill in the art at the time the invention was made that the detectable surface could comprise a single surface having a leading edge and a trailing edge as this would represent the varying characteristic of the shaft of Kyodo described above.

13. As per claim 4, it is rejected for reasons as given above for claim 1 and further as it would have been obvious to one of ordinary skill in the art at the time the invention was made that said rotatable element could comprise a tool spindle drive shaft as this is but one of many inter-related rotating elements in the computer-controlled machine that could be selected as a particular circumstance warranted.

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14. As per claim 5, it is rejected for reasons as given above for claim 1 and further as it would have been obvious to one of ordinary skill in the art at the time the invention was made that said rotatable element could comprise a back-off cam drive shaft as this is but one of many inter-related rotating elements in the computer-controlled machine that could be selected as a particular circumstance warranted.

15. As per claim 6, it is rejected for reasons as given above for claim 1 and further as it would have been obvious to one of ordinary skill in the art at the time the invention was made that said rotatable element could comprise a crank as this is but one of many inter-related rotating elements in the computer-controlled machine that could be selected as a particular circumstance warranted.

16. As per claim 7, it is rejected for reasons as given above for claim 1 and further as it would have been obvious to one of ordinary skill in the art at the time the invention was made that said rotatable element could comprise a tool spindle as this is but one of many inter-related rotating elements in the computer-controlled machine that could be selected as a particular circumstance warranted.

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17. As per claim 8, it is rejected for reasons as given above for claim 1 and further as Kyodo shows said position sensor comprising a non-contact proximity sensor (e.g., figure 1, element 3).

18. As per claim 9, it is rejected for reasons as given above for claim 1 and further as it would have been obvious to one of ordinary skill in the art at the time the invention was made that the least one detectable surface could extend generally 180 degrees about said rotatable element as this would represent but one of many possible variations in the distribution of detectable surface about the rotatable surface as a particular circumstance warranted.

19. As per claim 10, it is rejected for reasons similar to those given in the rejection of claim 2 and as it represents a particular type of machine as recited in claim 2.

20. As per claim 11, it is rejected for reasons as given above for claim 10 and also for those given for claim 4.

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21. As per claim 12, it is rejected for reasons as given above for claim 10 and also for those given for claim 5.

22. As per claim 13, it is rejected for reasons as given above for claim 10 and also for those given above for claim 8.

23. As per claim 14, it is rejected for reasons as given above for claim 10 and also for those given for claim 9.

24. As per claim 15, it is rejected as being a method analogous to the machine rejected in claim 2.

25. Claims 3, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, Applicant's specification pages 1-2 (hereinafter AAPA) in view of Kyodo et al. (5,652,510) (hereinafter Kyodo) and in further view of Cebis et al. (6,208,131) (hereinafter Cebis).

26. As per claim 3, as best understood, it is rejected for reasons similar to those given above for claim 1. Specifically, AAPA shows the invention substantially as claimed having a computer controlled machine for forming at least one tooth on a workpiece with a cutting tool, said cutting tool being

reciprocated to define a tool stroking motion wherein said tool stroking comprises a cutting stroke and a return stroke, and wherein said return stroke is carried out at a speed faster than the speed of said cutting stroke, said machine comprising a rotatable element associated with the reciprocation of said cutting tool (e.g., page 4, line 20 through page 6, line 17).

AAPA does not specifically show said element including at least one detectable surface positioned thereabout, a position sensor located adjacent said element and detectable surface,

whereby during rotation of said element, the passing of a leading edge of said at least one detectable surface proximate

~~said position sensor at the beginning of said return stroke~~

results in a signal being sent to the computer to effect an increase in the speed of the return stroke relative to the speed of said cutting stroke, and wherein passing of a trailing edge of said at least one detectable surface proximate said position sensor at the end of said return stroke or at the beginning of said cutting stroke results in a signal being sent to the computer to effect a return to the speed of the cutting stroke.

However, AAPA shows the known usage of programming a machine controller to vary the rotational speed of a drive shaft connected to a stroking mechanism by inputting commands whereby rotational speeds are varied between predetermined degree

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intervals of drive shaft rotation (e.g., page 2, lines 23-30).

Further, Kyodo shows a shaft position sensor where

characteristics of one portion of the shaft differs from that in

other portions (e.g., col. 2, lines 14-28). While Kyodo deals

with shaft position detection where the shaft has displacement

along its axis, it would have been obvious to one of ordinary

skill in the art at the time the invention was made that such

differing characteristic detection would be equally applicable

to shaft rotational position detection and that that such

rotational position detection could be combined with the known

suggestion of using predetermined degree intervals recited in

AAPA (e.g., -col. 2, lines 14-28) to produce the machine of claim

1 having an element including at least one detectable surface

positioned thereabout, a position sensor located adjacent said

element and detectable surface,

whereby during rotation of said element, the passing of a

leading edge of said at least one detectable surface proximate

said position sensor at the beginning of said return stroke

results in a signal being sent to the computer to effect an

increase in the speed of the return stroke relative to the speed

of said cutting stroke, and wherein passing of a trailing edge

of said at least one detectable surface proximate said position

sensor at the end of said return stroke or at the beginning of

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said cutting stroke results in a signal being sent to the computer to effect a return to the speed of the cutting stroke because this would provide a more flexible way of obtaining shaft angular information for the machine of AAPA. Additionally, Cebis shows the use of two detectable surfaces (position indicators) in a system for determining angular shaft information (e.g., figure 1, elements 3 and 4 and col. 7, lines 7 - 15) which provide input to a sensor (figure 1, element 5 and col. 7, lines 20 -23). While Cebis relates to an encoder associated with a shaft and which may be rotating synchronously therewith (e.g., col. 7, lines 9-11), it would have been obvious to one of ordinary skill in the art at the time the invention was made that these indicators could be directly attached to the respective shaft in order to provide an enhanced system with reduced weight relative to a shaft system having an attached encoder and thus, in combination with AAPA and Kyodo, provide the structure of claim 3.

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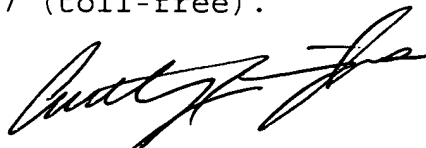
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M. Shute whose telephone number is (703) 305-5615 (571-272-3690 on or about 10/26/04). The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (703) 308-3179 (571-272-3687 on or about 10/14/04). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



October 12, 2004



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